

AF/2111 *IRW*

Docket No.: M4065.0407/P407  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Terry R. Lee

Application No.: 09/887,021

Confirmation No.: 6645

Filed: June 25, 2001

Art Unit: 2111

For: SHIELDED ROUTING TOPOLOGY FOR  
HIGH SPEED MODULES

Examiner: T. U. Vu

**APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 41.41**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is filed pursuant to 37 C.F.R. § 41.41 and is responsive to the Examiner's Answer mailed March 30, 2007 in connection with the appeal from the final rejection of claims 1-20, 22-33, and 35 in the above-identified U.S. patent application.

I. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 33 claims pending in the application.

B. Current Status of Claims

1. Claims canceled: 21 and 34
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 1-20, 22-33, and 35
4. Claims allowed: None
5. Claims rejected: 1-20, 22-33, and 35

C. Claims On Appeal

The claims on appeal are claims 1-20, 22-33, and 35.

## II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The first ground of rejection to be reviewed on appeal is the rejection of claims 1-2, 5-9, 11-12, 14-16, 18-20, 24, 26-27, 29-31, and 33 under 35 U.S.C. § 103(a) as being unpatentable over Robertson et al., U.S. Patent No. 6,658,530 ("Robertson") in view of Alleged Admitted Prior Art ("AAPA").

B. The second ground of rejection to be reviewed on appeal is the rejection of dependent claims 3 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Robertson in view of the AAPA and further in view of Chin et al., U.S. Patent No. 6,216,205 ("Chin").

C. The third ground of rejection to be reviewed on appeal is the rejection of dependent claims 4, 10, 13, 17, 23, 28, 32, and 35 under 35 U.S.C. § 103(a) as being unpatentable over Robertson and the AAPA in view of Ortega et al., U.S. Patent No. 6,257,587 ("Ortega").

D. The fourth ground of rejection to be reviewed on appeal is the rejection of dependent claim 25 under 35 U.S.C. § 103(a) as being unpatentable over Robertson in view of the AAPA and further in view of Elabd, U.S. Patent No. 6,526,462 ("Elabd").

### III. ARGUMENT

Although the Examiner's Answer does not raise any new grounds for rejection, Appellant writes briefly here to respond to the Examiner's remarks regarding Appellant's arguments in the Appeal Brief.

A. The subject matter of Claims 1-2, 5-9, 11-12, 14-16, 18-20, 24, 26-27, 29-31, and 33 would not have been obvious over Robertson in view of the AAPA.

Claim 1 recites a circuit card with "a circuit element supported by the circuit card." The circuit element has "a plurality of inputs and outputs," and "a plurality of signal lines supported by the circuit card." Each signal line is "electrically connected respectively to one of said plurality of inputs or one of said plurality of outputs." A "plurality of shields [is] supported by the circuit card." The signal lines are "grouped in a plurality of adjacent corresponding pairs." A shield is "located respectively on each side of each of said plurality of corresponding pairs of said signal lines." The other claims recite similar limitations, as detailed in Appellant's Appeal Brief.

In the Appeal Brief, Appellant argued that "If one of ordinary skill in the art follows the teachings of Robertson, one would not be motivated to follow the teachings of the AAPA to add shields that extend the entire length of the signal to the circuit cards, but would instead be motivated by Robinson to eliminate the shields of the AAPA and simply provide ground connector pins...." (Appeal Brief, Pages 12-14) The Examiner's Answer stated that "Roberson [sic] teaches ground shields ... located on each side of every pair of signal lines ... to reduce cross-talk" and correctly admits that "Roberson [sic] does not explicitly disclose the shields which extend from the ground pins to the entire length of the signals, but instead discloses shielding only at the pins."

(Examiner's Answer, Page 11) Therefore, the Examiner attempts to combine Robertson with AAPA, which the Examiner describes as "disclos[ing] shields ... which extend along the entire length of the signals ...." (Examiner's Answer, Pages 11-12)

Appellant does not dispute that Robertson discloses grounded connector pins or that the AAPA depicts grounded traces along a length of the signal lines. Rather, Appellant asserts that Robertson teaches grounded traces along the entire length of the signal lines are unnecessary.

The use of a connector with a large number of ground pins may allow the module to operate at higher frequencies while preserving the integrity of the various control, address, and data signals conveyed between the module and a computer system. Furthermore, by keeping the address pins centrally located on the connector, circuit board area may be more efficiently utilized.  
(Robertson, 2:64-3:4)

As Robertson expressly notes, efficiency is a significant factor in the design of circuit board layouts. A circuit board with fewer components, for example fewer conductive traces, requires fewer processing steps and is, therefore, less expensive to manufacture and more salable. If, as Robertson states, using a connector with a large number of ground pins allows a memory module to operate at high frequencies while preserving signal integrity, then one of ordinary skill in the art would not be motivated to *unnecessarily*, according to Robertson, increase circuit board complexity and manufacturing costs by adding grounded traces along a the entire length of the signal traces.

Appellant's assertion that "one of ordinary skill in the art ... would ... be motivated by Robertson to eliminate the shields of the AAPA and simply provide ground connector pins, as Robertson teaches, to eliminate cross-talk," follows logically from the desire to maximize circuit board layout efficiency and reduce manufacturing

costs. One of ordinary skill in the art would not be motivated to combine Robertson and the AAPA because doing so would, according to Robertson, unnecessarily increase circuit board complexity, reduce manufacturing efficiency, increase costs, and reduce salability. Therefore, the claimed invention is not obvious over Robertson and the AAPA, and the rejection of claims 1-2, 5-9, 11-12, 14-16, 18-20, 24, 26-27, 29-31, and 33 should be reversed.

B. The subject matter of Claims 3 and 22 would not have been obvious over Robertson in view of the AAPA and further in view of Chin.

Claims 3 and 22 depend from claims 1 and 19, respectively, and are allowable along with their respective base claims for at least the reasons stated above with respect to those base claims. The Examiner's Answer does not dispute that, if the base claims were allowable, their respective dependent claims are also allowable. Therefore, the rejection of claims 3 and 22 should be reversed.

C. The subject matter of Claims 4, 10, 13, 17, 23, 28, 32, and 35 would not have been obvious over Robertson in view of the AAPA and further in view of Ortega.

Claims 4, 10, 13, 17, 23, 28, 32, and 35 depend from claims 1, 8, 11, 15, 19, 26, 30, and 33, respectively, and are allowable along with their respective base claims for at least the reasons stated above with respect to those base claims. The Examiner's Answer does not dispute that, if the base claims are allowable, their respective dependent claims are also allowable. Therefore, the rejection of claims 4, 10, 13, 17, 23, 28, 32, and 35 should be reversed.

D. The subject matter of Claim 25 would not have been obvious over Robertson in view of the AAPA and further in view of Elabd.

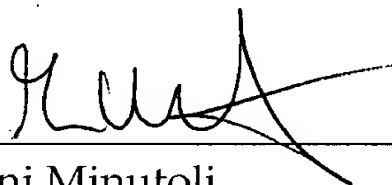
Claim 25 depends from claim 19 and is allowable along with claim 19 for at least the reasons stated above with respect to claim 19 and on its own merits. The Examiner's Answer does not dispute that, if claim 19 is allowable, claim 25 is allowable along with claim 19. Therefore, the rejection of claim 25 should be reversed.

#### IV. CONCLUSION

For the foregoing reasons, Appellant respectfully submits that the claimed invention is not rendered obvious by the cited combination of references, and reversal of the final grounds of rejection is respectfully solicited.

Dated: May 30, 2007

Respectfully submitted,

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